

CLAIMS:

1. An arrangement for determining the position of a magnetic-field-sensitive sensor unit in the magnetic field of a magnet arrangement having an at least substantially bar-shaped contour along an at least substantially rectilinear motion coordinate that extends parallel to a longitudinal axis of the at least substantially bar-shaped contour, in which the
5 magnetic-field-sensitive sensor unit is intended to measure a component of the magnetic field which extends in a plane that is at least substantially parallel to the longitudinal axis of the at least substantially bar-shaped contour in a manner at least substantially perpendicular to this longitudinal axis, and the magnet arrangement has a magnetic north pole in the region of a first end of the at least substantially bar-shaped contour, a magnetic south pole in the region
10 of a second end of the at least substantially bar-shaped contour, and a narrowing of the at least substantially bar-shaped contour in the central region extending between the north pole and the south pole.
2. An arrangement as claimed in claim 1, characterized in that the narrowing of
15 the at least substantially bar-shaped contour corresponds at least in sections to a shape that at least substantially follows the profile of an ellipse.
3. An arrangement as claimed in claim 1, characterized in that the narrowing of
20 the at least substantially bar-shaped contour corresponds at least in sections to a shape that at least substantially follows the profile of a cycloid.
4. An arrangement as claimed in claim 1, 2 or 3, characterized in that the
magnetic-field-sensitive sensor unit is designed with a Wheatstone bridge of
magnetoresistive elements, the longitudinal direction of which extends at least substantially
25 along the motion coordinate.
5. An arrangement as claimed in at least one of the preceding claims,
characterized in that the magnet arrangement is connected to a first body and the sensor unit

is connected to a second body, in order to determine the position of the first body with respect to the second body along the motion coordinate.

6. An arrangement as claimed in claim 5, characterized in that the first and
5 second bodies are formed by parts of a motor vehicle.
7. An arrangement as claimed in claim 6, characterized in that the first and
second bodies are formed by parts of the internal combustion engine of a motor vehicle.
- 10 8. An arrangement as claimed in claim 7, characterized in that the second body
comprises part of a valve mechanism for the internal combustion engine of a motor vehicle,
and the first body is designed with a part of the valve mechanism that can move with respect
thereto.